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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/546,262	04/10/2000	Khuy V. Nguyen	2000-104	3048

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EXAMINER

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 11/21/2002

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/546,262

Applicant(s)

NGUYEN ET AL.

Examiner

Susy N Tsang-Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☒ Other: *See Continuation Sheet.*

Continuation of Attachment(s) 6). Other: Recent Statutory Changes to 35 USC 102(e).

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/2002 has been entered.

Response to Amendment

2. This Office Action is responsive to the amendment filed on 8/21/2002. Claims 1, 2, 7, and 9 have been amended. Claims 1-11 are pending and are rejected for the reasons below.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 9, the limitation “a microporous polyolefinic membrane having a shutdown temperature of less than about 130 °C ” does not appear to be in the specification. Page 3 of the specification mentions that shutdown of the separator should occur at a temperature of less than 130 °C.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 1, 2, and 9, the limitation “said oligomer comprising at least 20% by weight of said blend” is not in the original disclosure.

Table 4 of the specification discloses 10%, 20%, 30%, and 40% by weight of the oligomer in the blend and does not disclose for example, 51-99% by weight of oligomer in the blend which is encompassed by the limitation “at least 20% by weight of the blend.” Applicant has support for “at least 20% by weight of the blend and less than or equal to 50% by weight of the blend” since page 5 of applicant’s specification state “blends may comprise less than 50% by weight oligomer” and original claim 6 recites “said blend having 50% or less by weight of oligomer”.

Claims depending from claims 1, 2, and 9 are also rejected for the same.

In claim 2, the added limitation “wherein said C₂ based polymer having a molecular weight less than 500,000” is not in the original disclosure.

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Applicant did not disclose which spectrum of molecular weights of HDPE, a C₂ based polymer, to use in the original disclosure and HDPE can have a variety of molecular weights. Furthermore, the limitation "C₂ based polymer has a MW <500,000" is not limited to high density polyethylene and applicant does not have support for a C₂ based polymer having a MW <500,000 that is not high density polyethylene. For example, a C₂ based polymer can be polytetrafluoroethylene.

Claims depending from claim 2 are also rejected for the same.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-11 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 11-240970 A (machine translation obtained from JPO website).

JP 11-240970 A discloses a battery separator comprising a microporous polyolefinic membrane being made from a blend of polypropylene and (see paragraph 14 of the machine translation) a low melting matter such as polyethylene wax (an oligomer) with a molecular

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weight average of 100-10000 in an amount in the range of 2 to 200 weight part to 100 weight part of the polyolefin (see paragraph 17 of the machine translation). This is equivalent to 1.96 % to 66.7% by weight of the polyethylene wax in the blend which overlaps the claimed range of greater than 20 wt% of the polyethylene wax in the blend and the claimed range of 50% or less by weight of the polyethylene wax (oligomer). Besides polypropylene, the polymer can be polymethylpentene, and polybutene (see paragraph 23 of machine translation). The microporous polyolefinic membrane has a porosity ranging from 20 to 80%, an average pore size of 0.01 to 1 micron and a thickness in the range of 10 to 100 micron which overlaps with the claimed range of less than 76.2 microns (3 mils) in thickness (see paragraph 37 of machine translation).

The separator has a shutdown temperature that is less than the melting point of the polymer (see paragraphs 18-19 of machine translation).

JP 11-240970 A also discloses that the separator can be a multilayered separator by laminating the microporous polyolefinic membrane with a support such as a nonwoven fabric (see paragraph 21 of machine translation).

In specific example 1, 100 weight part of polypropylene was combined with 40 weight part of low molecular weight polyethylene was having a molecular weight of 3000 (see paragraph 61 of machine translation) which is equivalent to 28.6% by weight of the polyethylene wax (oligomer) in the blend.

JP 11-240970 A discloses a lithium battery comprising the aforementioned separator (see paragraph 75 of machine translation).

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A lithium battery comprises an anode , a cathode and a separator between the anode and cathode and electrolyte in ionic communication with the anode and cathode via the separator (see paragraph 3 of machine translation).

JP 11-240970 A also discloses a battery separator for a lithium battery comprising a microporous polyolefinic membrane having a shutdown temperature of 128 °C (see Table 1, comparison example 1), a porosity of 59%, an average pore size of 0.24 micron (see paragraphs 67 and 68 of the machine translation). The microporous polyolefinic membrane comprises a blend of high density polyethylene (HDPE) and low molecular weight polyethylene wax having a molecular weight of 3000 and the amount of HDPE in the blend is 100 weight part and the amount of polyethylene wax in the blend is 40 weight part (see paragraph 67 of machine translation) which is equivalent to 28.6% by weight of the polyethylene wax in the blend.

8. Claims 1-6, 8, 10, and 11 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Takita et al. (US 5,922,492).

See abstract; column 1, lines 13-24; column 4, lines 3-42; and column 6, lines 8-15 and lines 58-64 of the reference.

Response to Argument

9. Applicant's arguments filed 8/21/2002 have been fully considered but they are not persuasive.

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Applicant's arguments regarding claim rejections based on the JP 8-20659 A reference are moot since these art rejections are withdrawn by the Examiner.

Applicant contends that claims 2-8, 10 and 11 do not contain new matter because one of ordinary skill in the art would understand that HDPE (high density polyethylene) has a molecular weight of less than 500,000 and that pages of the Berins reference submitted by applicant show that "high molecular weight" HDPEs are known to have molecular weights in the 200,000 to 500,000 range and therefore would support the limitation "C₂ based polymer having a molecular weight less than 500,000" recited in the claims.

In response, the Examiner would like to point out that a molecular weight of less than 500,000 encompasses 1-199,999 which is not supported by the specific portion of the Berins reference cited by applicants to support the 200,00 to 500,000 range claimed. Moreover, applicant does not disclose "high molecular weight" high density polyethylene in the original disclosure. It is noted on page 51 of the Berins reference that polyethylenes are classified by their density, not molecular weight. High density polyethylene has a density of 0.941 to 0.965 g/cu cm (see page 51 of the Berins reference). However, high density polyethylene can have a wide range of molecular weights. The Berins reference discusses a specific class of HDPE called "high molecular" HDPE with molecular weights of 200,000 to 500,000 range. Furthermore, at the high end of the spectrum is ultrahigh molecular weight HDPE with a weight average molecular weight of over 3 million (page 52 of the Berins reference). Applicant did not

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disclose which spectrum of molecular weights of HDPE to use in the original disclosure. The EP 603500 A1 reference specifically discloses a molecular weight range for HDPE.

Furthermore, the limitation “C₂ based polymer has a MW <500,000” is not limited to high density polyethylene and applicant does not have support for a C₂ based polymer having a MW <500,000 that is not high density polyethylene. For example, a C₂ based polymer can be polytetrafluoroethylene.

Applicant asserts that the range of oligomer as “at least 20% by weight of the blend” is supported by Table 4 on page 8 of the specification.

In response, Table 4 discloses 10%, 20%, 30%, and 40% by weight of the oligomer in the blend and does not disclose for example, 51-99% by weight of oligomer in the blend which is encompassed by the limitation “at least 20% by weight of the blend.” Applicant has support for “at least 20% by weight of the blend and less than or equal to 50% by weight of the blend” since page 5 of applicant’s specification state “blends may comprise less than 50% by weight oligomer” and original claim 6 recites “said blend having 50% or less by weight of oligomer”.

Conclusion

10. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/17 November 2002

Ausy Leung Foster

Recent Statutory Changes to 35 U.S.C. § 102(e)

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at www.uspto.gov or call the Office of Patent Legal Administration at (703) 305-1622.